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1. Scope:

This procedure describes the method of using a simple low precision Ohmmeter or Digital Volt Meter for resistance measurement/continuity verification or Megohm insulation tests.

2. Applicable Documents:

Equipment Manufacturers Instruction/Operation Manual(s).

RHIC-MAG-Q-1000	Magnet Division Procedure for Control of Measurement and Test Equipment
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RHIC-MAG-Q-10004	Discrepancy Reporting Procedure
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3. Requirements:

Data Sheet - RHIC Low Precision Resistance/Continuity/Insulation Test

Safety Precautions:

The technicians shall be qualified by their cognizant technical supervisor in the operation of the required test equipment and these electrical testing procedures. They shall be familiar with the latest revision of the applicable documents referenced in section 2. In addition, some of these tests require the technician to have special training. A list of qualified personnel shall be maintained with the RHIC ES&H Coordinator and the RHIC Training Coordinator.

Some of these electrical test procedures have specific safety requirements. The technicians performing these specific tests shall rigorously follow all the safety requirements listed as well as those prescribed by the BNL ES&H Standard.

3.1 Equipment:

Suitable 3-1/2 digit Digital Volt Meter - Basic accuracy, 0.5%, DC

Ohms resolution: 1 Ohm or less

Maximum resistance (or O.L. - "Over Load") - 20 Megohms or greater
(Typical meter models: Fluke 77, Beckman 3010)

3.2 Procedure:

3.2.1 Basic Ohmmeter operation. (See Manufacturers Manual).

3.2.1.1 Turn unit on. Self check OK. All display segments OK.

3.2.1.2 Verify that battery voltage is not low.

3.2.1.3 Select lowest resistance range.

3.2.1.4 Short probes together. Verify that meter reads 0 or < 1 Ohm.

3.2.1.5 Select continuity and short probes to verify beeper (if present).

3.2.1.6 Select highest resistance range.
Short probes. Verify reading of 0.
Open circuit probes. Verify O.L. or > 20 Megohm reading.

3.2.2 Low resistance measurement or continuity verification:

3.2.2.1 Select lowest resistance or continuity range.

3.2.2.2 Momentarily short probes together to verify operation.

3.2.2.3 Connect probes across circuit to be measured and read resistance value or listen for beeper indicating continuity. Record resistance on data sheet.

3.2.2.4 Disconnect probes from circuit.

3.2.3 High resistance measurement or insulation test:

3.2.3.1 Select highest resistance range.

3.2.3.2 Momentarily short probes together to verify operation.

3.2.3.3 Connect probes across circuit to be measured and read resistance value or verify O.L. or > 20 Megohm reading. Record resistance on data sheet.

3.2.3.4 Disconnect probes from circuit.

4. Quality Assurance Provisions:

- 4.1 The quality assurance provisions of this procedure requires that the technician shall be responsible for performing all inspections and tests in compliance with the procedural instructions contained herein and the recording of test results on the data sheet(s) and/or on the production traveler.
- 4.2 The technician is responsible for verifying that the test and measurement equipment used in this procedure has been calibrated and that the calibration sticker (date) has not expired as per RHIC-MAG-Q-1000.
- 4.3 The technician is responsible for notifying the technical supervisor and/or the cognizant engineer of any discrepancies occurring during the performance of this procedure. All discrepancies shall be identified and reported as per RHIC-MAG-Q-1004.

5. Preparation for Delivery:

N/A

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DATA SHEET

RHIC Low Precision Resistance/Continuity/Insulation Test

Magnet/Coil Type, Aperture, and Length: _____.

(example: Arc Quadrupole, 8cm, 1.13 Meter.)

or Cable/Wire No. _____.

Coil No. _____.

Measured Resistance _____ Ω .

Comments: _____

Above work done by:

Name & Life No., Date

List of Equipment Used for Measurements

Nomenclature	Manufacturer	Model	Serial No.	BNL Bar Code
Remarks: _____				